

**Research Article**

# Measuring the Impact of Supply Chain in the Performance of Human Resource: An Empirical Study of Private Management & Engineering Colleges in Lucknow, India

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**Abstract**

The supply chain function in organization has been changed significantly in recent decades and is now become one of the most important strategic functions for the accomplishment of organizational objectives. As a result of globalization, competition, modernization and technological changes supply chain themselves have become very complex. Despite of strategies has been taken by organization for competitive advantage through supply chain, it is impossible to think about success without effective human performance in the supply chain. Therefore, it is fair to say that HRM is key element for the success of organization goals. The purpose of the paper is to call attention to the importance of HRM in supply chain and draw conclusion from the collected data.

**Keywords:** Supply Chain Management; Human Resource Management; Productivity, Satisfaction; Employee performance

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## Introduction

Supply chain management functions in academics are related to necessary functions which are required to maintain and develop the human resource (teaching/non-teaching staff). In case of academic institutions the supply chain may be define as the facilities which are given to their teaching/non-teaching staff which help them in producing final product (students) for society.

Effective supply chain may become the one of the criteria of good academic institution because if any flaws or deficiency exists in the supply chain it may directly affect the performance of teaching/non-teaching staff. The basic purpose of SCM is the supply of service/product to the demanding unit at the right time, with the right quantity, quality, cost and at the right place. When the purpose is framed for academic institutions it is said to be like supply of young managers and engineers to their demanding organization or association at the right time, with the right quantity, in the quality and at the right place.

HRM is a key element for the success of any organization even for academic institutions. In the entire HRM activity, the following employee-centric outcomes needed for supply chain to operate in the academic institutions:

- Direct interaction with student/parents or guardian.
- Multi-tasking like performing the duty of invigilator's, counselor, examiner, event organizer etc.
- Commitment, co-operation and team spirit towards institutions.
- Ability to handle students issues carefully.
- Up-to-date knowledge about their core area.

The above said outcomes are help in acquiring and applying suitable competencies at work. The key competencies are required in this area are likely to be:

- Flexibility to adopt new responsibilities.
- Good communication.
- Problem solving ability.
- Deeper knowledge.
- Ability to get work done and learn new things quickly.
- Good team management skills.

Now, it is internationally accepted that effective HRM practices is an important elements of service quality and satisfaction. And when it lend with effective supply chain management it become a basis for competitive advantage. In contrast effective HRM practices are equally important in supply chain management. For the supply chain success it is required to understand the importance of HRM also. HRM practices such as training, developing skills, employment, leadership, work commitment & motivation can positively contribute to success of supply chain. Supply chain practices in academic institutions may differ from other manufacturing units. In academic institutions the facilities provided by the management to their teaching/non-teaching staff, are to be consider as supply chain like:

- Pleasurable working environment.
- Adequate infrastructural facilities.
- Up-to-date library.
- Latest technology adoption.
- Monetary/non-monetary benefits.
- Effective recruitment and selection process.
- Adequate training and development facilities.
- Students/Parents responsiveness.

## Review Literature

Ganeshan and Harrison [1] has defined SCM as a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers.

Christopher [2] defined the supply chain as the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer.

Mentzer et al. [3] “The systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.”

Supply Chain Management is a network of facilities that produce raw materials, transform them into intermediate goods and then final products, and deliver the products to customers through a distribution system. It spans procurement, manufacturing and distribution. The basic objective of supply chain management is to optimize performance of the chain to add as much value as possible for the least cost possible.

A good HR policy is one that treats the employee as a long-term investment. Seen this way, emphasis should be placed on the development of high performance skills, training, ongoing performance feedback and compensation above the market average [5]. Likewise, a participative management style, which emphasizes both formal and informal communication [6, 7] should have an impact on the implementation of the SC.

The selection of competent employees favours an effective SC, through the recruitment and retention of capable workers who are adaptable to dynamic and customer-oriented environments [8].

To ensure the success of their SCM, firms need to commit themselves fully to promoting this human dimension. Many firms focus their attention on improving and investing in technology and in infrastructure, but they need to dedicate the same attention to the people that manage and operate the SC. For Ou et al. (2010) an adequate HR system is a key element in the implementation of a SC and, consequently, for greater customer satisfaction (CS) and an improved operational performance.

## Objectives

1. To study the impact of supply chain in the performance of human resource.
2. To study the difference in performance level based on demographical characteristics with respect to supply chain.
3. To determine the important demographical characteristics that increase the performance of human resource with regards to supply chain.

## Methodology

The study is based on descriptive survey design. The target population for the study is teaching and non-teaching staff of private engineering and management colleges of Lucknow, India. Data for the study was collected from the teaching and non-teaching staff through self designed and self administered questionnaire covering the various variables identified in the literature such adequate working environment, up-to-date library, latest technology adoption, monetary and non-monetary benefits, recruitment & selection process, students and it effect on future performance. Convenience sampling technique was used in collecting primary data. This study is based on primary data collected from the study area and secondary data were obtained from literature. In all 84 respondents were used for the study. Data obtained from the field were analyzed using descriptive statistics such as frequencies of response, percentages, one way ANOVA, chi-square, mean, standard deviation with the use of SPSS which is 20.0 versions.

## Result and Discussion

Demographic characteristic of respondent were shown in the Table No.1. From the total number (84) of respondents 50% (n=42) teaching and 50% (n=42) non-teaching staff are from private engineering and management colleges in Lucknow. Majority of respondent are female 58.3% (n=49) and male are 41.7% (n=35). From the frequency distribution presented in Table No.1, it may be depicted 55.5% of the sample (n=13) are less than 25 years of age. It can thus be seen that the majority of the employees in the sample 52% (n=44) fall into the age category 25 - 35. And 32% (n=27) respondent fall under the category of 35 and more than 40. The details of experience of sample are categories into two parts, between 2-5 years of experience having 50 (59.5%), and more than 10 years having 40.5%.

**Table1** Demographic Profile of Respondents

Characteristics		Frequency	Percentage
Gender	Male	35	41.7
	Female	49	58.3
Experience	Between 2-5	50	59.5
	More than 10	34	40.5
	Below 25	13	15.5
Age	Between 25-30	37	44
	Between 30-35	7	8.3
	Between 35-40	14	16.7
	more than-40	13	15.5
Category	Teaching	42	50
	Non-teaching	42	50

**Objective1:** To study the impact of supply chain in the performance of human resource.

**H1:** There is significant relationship between effective supply chain management and human resource.

**Outcome:** To determine whether there is a significant relationship between effective supply chain management and human resource among teaching and non-teaching staff of engineering and management colleges in Lucknow, one-way ANOVA test (Table No.2) has been used. In this case, the table value is less than to the calculated so, null hypothesis is rejected and conclude that there are significant relationships between effective supply chain management and human resource.

**Table 2.1** Summary of Respondents Responses

SUMMARY				
Groups	Count	Sum	Average	Variance
Column 1	22	459	20.86364	197.0758
Column 2	34	1549	45.55882	526.4358
Column 3	29	669	23.06897	219.2808
Column 4	17	263	15.47059	218.6397

**Table 2.2** ANOVA table of Respondents Responses

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	14907.75	3	4969.251	15.63407	2.2E-08	2.697423
Within Groups	31149.07	98	317.8477			
Total	46056.82	101				

**Objective 2:** To study the difference in performance level based on demographical characteristics with respect to supply chain.

**H2:** There is an association between the demographic characteristics and performance level with respect to supply chain.

**Outcome:** For testing second hypothesis Chi-square test is been used whether association exists between the demographic variables such as gender, experience, age and category and performance level with respect to supply chain among teaching and non-teaching staff.. The results of this test are tabulated under Table no.3.

**Table 3** Chi-square Table

Association Between	Calculated Chi-Square	Degree of Freedom	Table Value	Result
Gender & performance level with respect to Supply Chain	14.17	3	7.815	Association Exists
Experience & performance level with respect to Supply Chain	217	3	7.815	Association Exists
Age & performance level with respect to Supply Chain	495	12	21.02	Association Exists
Category & performance level with respect to Supply Chain	142	3	7.815	Association Exists

**Objective 3:** To determine the important demographical characteristics that increases the performance of human resource with regards to supply chain.

**Outcome:** To fulfill above objective mean and standard deviation has been used. Table no. 4 depicted that female perform more better than male when supply chain management are adequate but all female not similarly perform because standard deviation is very high as compared to male. As a matter of experience, those employees who had 2-5 years experience are more productive as compared to those who had more than 10 years experience. Employees below than 25 years of age are perform better as compared to other age groups of employees and their standard deviation is also low its mean all the employees (below 25 years) perform similarly when supply chain management is proper. While comparing teaching and non-teaching staff, teaching staff perform better as compared to

non-teaching when their organization provided better supply chain.

**Table 4** Mean & Standard Deviation of Respondents

Characteristics		Mean	SD
Gender	Male	66.51	7.09
	Female	71.6	27.3
Experience	Between 2-5	87.6	16
	More than 10	71.8	14.6
	Below 25	102	0
	Between 25-30	82.8	14.8
Age	Between 30-35	87	0
	Between 35-40	71	0
	more than-40	73	0
	Teaching	85.5	15.1
Category	Non-teaching	73.6	17.5

## Conclusions & Recommendations

There are strong interdependencies between Human Resource (HR) management and supply chain management and thus it is difficult to identify specific boundaries. Furthermore, these boundaries are continuously moving to accommodate an integration of supply chain and HR activities. Demographic variables such as gender, experience, age, and category of employees significantly affect respondent's responses as well as their performance towards effective supply chain management. This means policy makers should take these variables into consideration when introducing policies. The present study indicates that the impact of supply chain in the performance of human resource is significant. And if colleges provide adequate infrastructure, better pay policy, conducive working environment and latest technology adoption it will definitely enhance the performance of employees. The study also focuses on to check whether there is an association between performance levels based on demographical characteristics with respect to supply chain and it was found that the entire variable had association with performance and supply chain provided by the private engineering and management colleges in Lucknow. Mainly teaching staff, Female employees, employees had 2-5 years of experience and below 25 years are perform better as compared to their counterpart. Future studies should also look at the issue of supply chain among the independent variables and the dependent variables using since the paper does not focus on this issues and is descriptive in nature. The sample size could also be increased in future studies to ensure more external validity. Comparative studies must be done in future studies to assess if the findings will be replicated.

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